

**To the United States Patent and Trademark Office**

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Applicants: Roger D. Hersch, Bernard Wittwer  
Patent owner: Ecole Polytechnique Fédérale de Lausanne (EPFL)  
Appn. Title: **Method and computing system for creating and displaying images with animated microstructures**  
Examiner/GAU: Dennis Rosario-Vasquez /2621



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IFW

**Amendment (with applicants signature)**

Commissioner for Patents  
P.O.Box 1450  
Alexandria, Virginia 22313-1450

Lausanne, May 12, 2005

Sir:

Applicants acknowledge receipt of the Office Action dated 24<sup>th</sup> of March 2005 and note the Examiner's rejections and comments made therein. Applicants come now to amend the application and provide comments in response to the Examiner's Action.

**A. Item 3 of Examiner's Action:**

As asked by Examiner, in the attached "Amendment to specification", applicants amend paragraph 4 of the specification in order to delete the embedded hyperlink.

**B. Item 8 of Examiner's Action: Claim Objections**

a) Claim 2 has been cancelled.

b) Paragraph 61 of the specification (section "Detailed description of the invention", as published by the US PTO in publication 20030026500A1) contains the following sentence:

[0061] "The microstructure may represent a text, a logo, a symbol, an ornament or any other kind of visual motive. Furthermore, the microstructure may combine several items, e.g. several symbols either identical or different, or a freely chosen combination of text, logos, symbols and ornaments."

Following the suggestion of Examiner, but formulating it according to the above sentence from the description, we amend claims 24, 31, 34, 36, 39 and 41 as follows:

"where the microstructure represents at least one visual motive element selected from the set of text, logo, symbol and ornament".

This formulation leaves the possibility of "combining several items, .. either identical or different" and of having "other kinds of visual motives" within the microstructure. In the case however that Examiner does not accept this argument, applicants kindly ask Examiner to replace our formulation by his formulation

"where the microstructure represents a visual motive element selected from the set of text, logo, symbol and ornament".

in Claims 24, 31, 34, 36, 39 and 41.

**C. Item 10: Claim rejections as being anticipated by Rice (US Pat. 5,325,480A)**

Rice teaches a method for creating a texture map by the repeated application of graphical elements on a texture map. This method aims at “generating a dynamically altering image” which “simulates fluid effects in real-time on a scene” (Rice, claim 1, first and second line, see column 7, lines 24-25). This invention, i.e. creating real-time effects (e.g. drops of rain, Rice, column 3, line 43) within a scene, aims at “providing a *high degree of realism* through fluid effect illusions without requiring substantial texture memory” (column 1, lines 28-30).

Our invention has a completely different goal, namely embedding within an image a microstructure representing a visual motive (e.g. text) which forwards a message *independently* of the global image (see our description, paragraph [0007]: “the text is embedded as a microstructure layer within a global image which may be totally independent of the text”). In contrast to Rice, our image has *less realism*, since it embeds a microstructure which is independent of the image (e.g. the image in FIG. 5 is less realistic with the microstructure “GET READY” than without that microstructure, or the image in FIG. 11B embedding the microstructure “LSP” is less realistic than the image in FIG. 9A, without the microstructure).

Rice’s “graphical elements” (Rice, FIG. 2) are texture map elements (Rice, FIG. 3) which are an integral part of the image to be displayed and are therefore completely different from the visual motive represented by our microstructure, which aims at forwarding an *independent message* (e.g. publicity).

Nevertheless, applicants agree to follow Examiner’s advice and to introduce the main limitation present in allowable claim 5, which creates a very clear distinction in respect to Rice’s invention:

“where target image instances are rendered by dithering”

as a further limitation of claims 1, 14, and 19. These claims as well as their dependent claims are being amended in that sense. The above limitation is supported in paragraph [0008] of the description (section “Summary”).

However, since as mentioned in paragraph [0049] of our description, various methods beyond pure dithering can be used “to create or display images with embedded animated microstructures”, we have added claim 44, similar to claim 1, but with a slightly broader limitation:

“where target image instances are rendered by converting original image intensities into an element selected from the set of microstructure surface coverages and microstructure colors”.

Support is provided in the description, at paragraph [0050]: “Standard dithering converts an intensity into a surface percentage”, by the caption of FIG. 7: “FIG. 7C shows the conversion of relative intensities  $d_a$ ,  $d_b$ ,  $d_c$ , and  $d_d$  of colors  $C_a$ ,  $C_b$ ,  $C_c$ , and  $C_d$  into corresponding surface coverages”, and in paragraph [0075] “It is however possible to generate images with animated microstructures by applying the standard dithering method independently to one or several basic colors”, “The resulting target image will thus be rendered with red, green, blue, cyan (overlap of green and blue), magenta (overlap of red and blue), yellow (overlap of red and green) and white (overlap of red, green and blue)”.

We also created a dependent claim 45 “where the microstructure conveys publicity”. Support is provided in paragraph [0003] “In the present invention, we disclose a new method for delivering

publicity and information. According to this new method, an image (the global image) incorporates a microstructure which may be a text, a logo, an ornament, a symbol or any other microstructure."

#### **D. Item 11: Allowable Subject Matter**

Claims 24, 31, 34, 36, 39 and 41 are being amended as explained above (B) by limiting the microstructure to:

"where the microstructure represents at least one visual motive element selected from the set of text, logo, symbol and ornament".

Since claims 1, 14, and 19 have been further limited as described above (C), their dependent claims 5-9, 12, 13 and 16-18 should be allowed.

#### **Conclusions**

Applicants hope this answer, together with the amendments, traverses the rejections in the above identified Office Action, placing the updated claims and the new claims in condition for allowance.

Attached are the amended specification as well as an the new version of the claims, with the amendments described above.

In case Examiner would like to have an informal conversation with the undersigned applicant, he may phone at tel +41 21 693 43 57, between 9.00 a.m and 1.30. p.m New-York time. He may also contact us by email : [RD.Hersch@epfl.ch](mailto:RD.Hersch@epfl.ch)

Very respectfully,



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Attached: - Amended paragraph of specification (page 4)  
- New listing of claims with the amended claims (pages 5-10)

PS. Applicant is aware that email is not a secure communication medium, but nevertheless explicitly asks Examiner to use it for further informal discussions.